

USSR

SAMOSVAT, L. S., et al., Khimiya v Sel'skom Khozyaystve, Vol 8, No 3, Mar 70, pp 55-56

greater part of the herbicide (76.8-81.3 percent) decomposed the first two months following application. No linuron was found in the kernel of fully ripe corn grown with an application of 4 kg/ha of the herbicide. The green mass of corn in the flowering phase contained an insignificant quantity of the herbicide (0.13-0.14 mg per kg of plants with natural moisture content). A 3-4 kg/ha dose of linuron applied to corn had no adverse effect on the yield of oats, vetch-oat mixture, sunflowers, sugar beets or winter wheat.

2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--AFTEREFFECT OF LINURON AND ITS RESIDUES IN SOIL AND PLANTS -U-  
AUTHOR--(04)-SAMOSVAT, L.S., AVDYUSHKINA, S.I., VESELOVSKIY, I.V., MANKO,  
YU.P.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. SEL. KHIZ. 1970, 8(3), 215-16  
DATE PUBLISHED-----70  
SUBJECT AREAS--AERONAUTICS, BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--CHEMICAL DECOMPOSITION, SOIL CHEMISTRY, HERBICIDE, SOIL  
STRUCTURE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3004/0184 STEP NO--UR/0394/70/008/003/0215/0216  
CIRC ACCESSION NO--AP0130943  
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130943

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BIOASSAY BY SINAPIS ALBA AND CHROMATOG. ANAL. OF RESIDUAL LINURON FROM FIELD EXPTS. INDICATED THAT THIS HERBICIDE APPLIED AT PRESOWING CULTIVATION PENETRATED TO 10 CM OF STRONG LOW HUMUS, LOAMY CHERNOZEM SOIL. THE HERBICIDE WAS MOSTLY DEGRADED AFTER 2 MONTHS. NO RESIDUES WERE FOUND IN THE SEEDS. CROPS GROWN ON THE TREATED AREAS IN THE FOLLOWING YEARS WERE NOT AFFECTED.

FACILITY: VSES. NAUCH.-ISSLED. INST. GIG. TOKSIKOL. PESTITS.,  
POLIM. PLAST. MASS, KIEV, USSR.

UNCLASSIFIED

Instruments and Equipment

USSR

UDC 612.822.3

AVSTIN, D. V., and YERUSHKINOV, S. A., Laboratory of the Physiology of Innate Reflex Mechanisms, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR.

"Adaptation of the M-297 Respirator for Use in Microelectrode Studies"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, No 1 1970, pp 124-126

Abstract: The M-297 respirator, an apparatus normally used for newborn infants, is well suited for physiological experiments, but the range of possible frequencies at which air can be pumped is limited: 15, 20, 25 or 30 inhalations a minute. One of the problems in experiments involving the use of microelectrodes for intracellular derivation of bioelectric potentials from individual neurons of the spinal cord arises from the respiratory movements of the thorax. The amplitude of these movements can be reduced by decreasing the volume of air supplied while increasing the rate at which it is pumped. An adapter was developed that can be fitted to the M-297 (or any other apparatus that has a crank drive for transforming ro-

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AVILEV, D. V., et al., Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, No 1, 1970, pp 124-126

tatory into reciprocal motion), whereby the frequency of air pumping is increased threefold, permitting 45, 60, 75, or 90 inhalations a minute. The improve M-297 greatly improves the conditions for intracellular derivation of bioelectric potentials and stabilizes the position of the microelectrode in the cell.

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AVEN, O.I.

AUTOMATION

50: 3045 15352  
/ (date) 72

DEVELOPMENT OF AN AUTOMATED NATIONAL MARITIME TRANSPORT CONTROL SYSTEM

Article by O. I. Aven, Moscow Vsesoyuznyy Nauchno-Issledovatskiy Tsentr "Voennoye Vozdushnoye Flotilo" (Voenno-Vozdushnyy Flotil'nyy Nauchno-Issledovatskiy Tsentr, Part 1, 1971, 10 pages)

The subject is the maritime transport branch of the transport process. Control of the transport process is broken down into three components: control of the course of the transport process (navigation), control of maintenance of the fitness of the elements and vessels of the branch (fleet), and control of the fitness of the elements and vessels of the branch (fleet). The branch of the transport process, the basic control inputs to the branch, when controlling the transport process, are: 1) decisions with respect to the following: 2) transport operation plans, 3) decisions with respect to operation regulation of the operation of the fleet and ports, 4) ship repair plans, 5) equipment plans, and 6) plans for development of the branch.

When executing the task for maritime transport control system, the following problem was solved: develop and introduce a scientifically based man-machine control system providing for generation and implementation of the corresponding control inputs. Here, it is necessary to insure a defined value of the purpose function in the fixed time interval. In accordance with the technical assignment, the profitability is taken as this function. The branch includes the following basic material objects -- the fleet, the ports and the ship repair yards. Three versions of the control system structure were selected for the final development. The fleet will be divided among the "search" lines (there are 16 of them at the present time), and the ports will be subdivided either to the steering lines or they will be removed from subdivision. In this case, a version of control of the steering lines with respect to sailing will be developed. The environment has special significance for operation in maritime transportation. The effect of the environment can be considered by introducing into it two types of factors:

1. General factors: a) geography, b) economy, c) politics.
2. Situation factors (having a random nature): a) atmospheric conditions for transportation, b) competition in the freight market, c) conditions of supply, d) interruption of the cargo delivery schedule, e) meteorological conditions, f) emergencies, g) special conditions -- war, strikes and so on.

1/2 026 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--EFFECT OF HISTONES AND ACTINOMYCIN D ON RNA SYNTHESIS IN BRAIN -U-

AUTHOR--(02)-ASHMARIN, I.P., AVENIROVA, YE.L.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 2, PP 137-139

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, RNA, BIOSYNTHESIS, ANTIBIOTIC, PROTEIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1986/0829

STEP NO--UR/0301/70/016/002/0137/0139

CIRC ACCESSION NO--AP0102791

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102791  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. INTRACEREBRAL ADMINISTRATION OF ACTINOMYCIN D INTO MICE INHIBITS URIDINE AND OROTIC ACID INCORPORATION INTO RNA BY 62-79PERCENT 1 H AFTER INJECTION OF DRUG. AS DISTINCT FROM ACTINOMYCIN D-F SUB1 FRACTION OF THYMUS HISTONES DOES NOT INHIBIT RNA BIOSYNTHESIS IN BRAIN. THE LACK IN INHIBITORY ACTION OF HISTONES ON RNA SYNTHESIS MAKES IT POSSIBLE THAT THE SITE OF HISTONES ACTION IN BRAIN TISSUE CELLS IS NOT THE CHROMATINE BUT OTHER STRUCTURES POSSIBLY THE MEMBRANES.

UNCLASSIFIED



USSR

UDC 51:155.001.57:612.82

AVERBUKH, D. Ya.

"Certain Problems of Simplification of the Description of Large Systems"

Bol'shiye Sistemy. Massovoye Obsluzh. Nadezhnost' [Large Systems. Queueing. Reliability -- Collection of Works], Moscow, Nauka Press, 1970, pp 45-54 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V604 by V. Serdobol'skiy).

Translation: Results are presented from a statistical study of the average behavior of rather large networks of formal neurons. The neurons are represented by linear threshold elements. The weight coefficients and thresholds were selected at random. Two main simplifying assumptions were used: statistical independence of signals at the inputs from the random parameters of the network and statistical independence of signals at various inputs from each other. As a result of averaging, closed equations were produced, describing the time dependence of the average activity of the network and the time correlations for MacCulloch and Pitts neurons, refractory neurons, continuous neurons and pulse neurons. The existence of a threshold of mean network activity is established, over which excitation of the network is not attenuated.

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USSR

UDC 576.8.095.383

ZVYAGINTSEV, D. G., PERTSOVSKAYA, A. F., YAKHNIN, YE. D., and AYERBAKH, E. I., Chair of Soil Biology, Biology and Soil Faculty, Moscow State University imeni M. V. Lomonosov, Moscow, and Institute of Physical Chemistry, Academy of Sciences USSR

"Determination of the Degree of Adhesion of Cells of Microorganisms to Solid Surfaces"

Moscow, Mikrobiologiya, Vol 40, No 6, Nov/Dec 71, pp 1024-1028

Abstract: The force with which cells of 11 strains of microorganisms of 9 species adhered to the surface of a glass plate upon adsorption was determined on a centrifuge equipped with a special rotor. The number  $N_0$  of cells adsorbed on the glass surface from suspensions of equal concentration before the force detaching them was applied decreased in the order Staphylococcus aureus 120 > Bacterium fimbriatum > Bacillus mesentericus 112 > Ser. marcescens 71 > Ser. marcescens 103 > Bac. mesentericus 53 > Pseudomonas fluorescens > Ps. pyocyanea Bac. cereus 116 > Bac. subtilis 27 > Saccharomyces cerevisiae. The value of  $\chi_F = N.100/N_0$ , where N is the number of cells that remained on the surface after rotation at 16,000 rpm (7,800 rpm for Sacch. cerevisiae), decreased in the order Ser. marcescens 71 > Staph. aureus 120 > Ser. marcescens 103 > Sacch. cerevisiae 1/2/

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ZVYAGINTSEV, D. G., et al., Mikrobiologiya, Vol 40, No 6, Nov/Dec 71, pp 1024-1028

bac. cereus 116 > Ps. pyocyanea > Bac. mesentericus 53 > Bact. fimbriatum > Ps. fluorescens > Bac. mesentericus 112 > Bac. subtilis 27. The force  $F_{50}$  at which 50% of the cells adhering to the glass became detached was within the range of  $4 \times 10^{-7}$  -  $4 \times 10^{-4}$  dyne/cell for the microorganisms studied.  $\gamma_F$  decreased with increasing age of the cultures. It was typical for some strains (principally those of species of the genus Bacillus) that the number of cells which adhered to the surface was small, while  $F_{50}$  was large ( $0.6 \times 10^{-5}$  dyne/cell). For Ser. marcescens 71 and Staph. aureus 120, both the number of cells that adhered and the force of adhesion were large. Non-sporiferous bacteria (e.g., those of the genus Pseudomonas) adhered to the solid surface in large numbers, while  $F_{50}$  for them was small ( $0.4 \times 10^{-6}$  -  $0.6 \times 10^{-6}$  dyne/Cell). Consideration of the values of  $P_a$  equal to the ratio of  $F_{50}$  to the volume of a cell indicated that the force of adhesion on the basis of  $P_a$  was highest for Ser. marcescens 71 and Staph. aureus 120, while it was much lower for the other strains. An electron-microscopic examination showed that the great strength of adhesion of Ser. marcescens 71 and Staph. aureus 120 was due to the presence of thin cell-wall protuberances that facilitated contact. 2/2

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Acc. Nr.

APb105553

Abstracting Service:  
CHEMICAL ABST.

6-70

Ref. Code

4R0449

126935p Infrared reflection and transmission spectra of boron. Averbakh, E. M.; Ugai, Ya. A.; Yatsenko, O. B.; Solov'ev, N. E. (Voronezh. Gos. Univ., Voronezh, USSR). *Fiz. Tekh. Poluprov.* 1970, 4(3), 623-5 (Russ). The ir reflection and transmission spectra of B in the  $\beta$ -rhombohedral form were investigated in the range 1-15  $\mu$ . Instrumentation and sample prepn. are described for reflectance and transmission studies. Spectra are presented. Transmittance of B single crystals decreases sharply at wavelengths  $>4.5 \mu$  and increases beyond 13  $\mu$ . Reflectance and transmission spectra show considerable agreement. A band at 8.15  $\mu$  is assigned as a result of crystal lattice vibration. Bands at 7.2 and 2.7  $\mu$  are the result of crystal impurities.  
Edward F. King

ELB

REEL/FRA

19880568

USSR

UDC 546.791.6'21'131-386

FOMIN, V. V., LIPIS, L. V., AVERBAKH, L. I., MAYOROVA, Ye. P., and LEMAN, G. A.

"Uranyl Chloride Solvation With Tributylphosphate"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 16, No 3, Mar 71, pp 772-775

Abstract: A study of the system  $\text{UO}_2\text{Cl}_2$ -tributylphosphate (TBP) was carried out, concentrating on the effect of the solvent. The system was studied by the cryoscopical method, the distribution method, and spectroscopically. Extraction of  $\text{UO}_2\text{Cl}_2$  with the mixture of TBP and  $\text{CCl}_4$  + dichloroethane or heptane gave a pure compound  $\text{UO}_2\text{Cl}_2 \cdot 2\text{TBP}$ , supporting the contention that disolvates form under conditions studied. The spectrum of  $\text{UO}_2\text{Cl}_2 \cdot 2\text{TBP}$  depended strongly on the solvent used in spectral analysis, but there were no indications that solvates other than the disolvate were formed. Cryoscopical determinations showed that only the disolvates exist in the system  $\text{UO}_2\text{Cl}_2$  -  $2\text{TBP}$ .

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Organ and Tissue Transplantation

UDC 612.17+612.2157-089.843

USSR

PRIYMAK, A. A., GERASIMENKO, M. I., ANICHKOV, M. N., VIGDORCHIK, I. V.,  
AYERBAKH, M. M., DOBKIN, V. G., DEMIDOV, B. S., VIGDORCHIK, S. I., PAKHOMOVA,  
Z. I., PETUKHOVA, I. V., VAKSMAN, B. H., GALAYEVA, V. H., and KOZLOV, P. D.

"Use of an Isolated Heart-Lung Preparation in Experimental Transplant Surgery"

Moscow, Voenno-Meditsinskiy Zhurnal, No 2, 1971, pp 22-23

Abstract: Brief preliminary report on the use of an isolated heart-lung preparation with a working heart in more than 200 experiments on dogs, swine, calves, and sheep. The isolated heart-lung preparation is connected by special cannulas to the peripheral vessels of the recipient's systemic circulation. The isolated lungs inspire an air mixture under hyperventilation conditions. The parameters of electrical activity of the donor's and recipient's hearts, recipient's brain, hemodynamics, biochemical changes in blood, external respiratory function, blood gases, morphology of the tissues of the isolated heart-lung preparation (in various stages of survival) and of the recipient (following biological oxygenation) are investigated. The experiments showed that the physically stabilized heart-lung preparation when used as a biological oxygenator remains viable and ensures good lung and heart function for 10 to 15 hours. It is capable of adjusting automatically to the recipient's circulation and without traumatizing the formed elements

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PRIYMAK, A. A., et al., Voenno-Meditsinskiy Zhurnal, No 2, 1971, pp 22-23  
of the blood maintains the necessary blood flow rate.

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DEGREE OF LIGHT ABSORPTION IN POTASSIUM DIHYDROGEN PHOSPHATE SINGLE  
CRYSTALS -U-  
AUTHOR-(03)-AVERBAKH, V.S., BATYREVA, I.A., BESPALOV, V.O.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., RADIOFIZ. 1970, 13(2), 307-9  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--PHOSPHATE, SINGLE CRYSTAL, HYDROGEN COMPOUND, ABSORPTION  
COEFFICIENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1559 STEP NO--UR/0141/70/013/002/0307/0309  
CIRC ACCESSION NO--AP0125185  
UNCLASSIFIED



UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 018

CIRC ACCESSION NO--AP0125185

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECTRAL CURVES WERE DETD. OF THE  
ABSORPTION COEFFS. OF K DIHYDROGEN PHOSPHATE SINGLE CRYSTALS IN THE  
WAVELENGTH RANGE 0.6-1.4 MU FOR THE ORDINARY AND THE EXTRAORDINARY RAYS.  
THE RELATIVE DISPERSION OF THE ABSORPTION COEFF. FOR THE ORDINARY WAVE  
WAS LOW.  
FACILITY: NAUCH.-ISSLED. RADIOFIZ. INST., GOR'K.  
UNIV., GORKI, USSR.

UNCLASSIFIED

USSR

A  
UDC 546.814-31:548.55

UGAY, YA. A., LAVROV, V. V., ANOKHIN, V. Z., and AVERBAKH, YE. M.,  
Voronezh State University., Voronezh, Ministry of Higher and Secondary  
Specialized Education, RSFSR  
"Growth of  $\text{SnO}_2$  Single Crystals"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol  
6, No 4, Apr 70, pp 750-752

Abstract: A method is suggested for the growth of  $\text{SnO}_2$  crystals  
which is more convenient than known methods for the growth of  $\text{SnO}_2$   
crystals from the gas phase. The transporting agent is water in the  
vapor state, continuously fed to the "evaporation" zone. A cylindrical  
specimen of pressed and annealed stannic oxide (diameter 22 mm) is  
placed in a high-temperature zone ( $t = 1570^\circ \text{C}$ ) created by carborundum  
heaters inside a high-alumina ceramic tube (diameter 22 mm). A stream  
of water vapor from a quartz boiler is continuously fed into the fur-  
nace. The rate of water vapor feed into the  $\text{SnO}_2$  evaporation zone  
does not exceed 4 mol/hr. Intensive growth of  $\text{SnO}_2$  crystals is ob-

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UGAY, YA. A., et al., Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 4, Apr 70, pp 750-752

served in the furnace zone with a temperature  $\sim 1450-1520^{\circ}$  C. The color and faceting of the freely growing crystals vary greatly according to the temperature of the crystallization zone. The article considers the growth mechanism and the attendant chemical interactions.

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USSR

UDC: 621.372.824

AVERBUK, M. E., VASIL'YEVA, L. V.

"A Coaxial Line of Elliptical Cross Section With Two-Layer Filling"

V sb. Vopr. elektron. tekhniki (Problems of Electronic Technology--collection of works), Saratov, 1971, pp 98-104 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B152)

Translation: The dispersion equation of a two-layer line is found by means of difference functions in the general case of a laminar isotropic coaxial line of elliptical cross section. Five illustrations, bibliography of nine titles. Resumé.

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USSR

UDC: 621.372.853.2.092.22

AVERBUK, M. E.

"Fields in Longitudinally Gyrotropic Circular Cylindrical Layers Near a Shield"

V sb. Vopr. elektron. tekhniki (Problems of Electronic Technology--collection of works), Saratov, 1971, pp 93-97 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B146)

Translation: Bessel difference functions are used in deriving expressions for the intensities of fields which open up possibilities for the derivation of dispersion equations for multiple-layer longitudinally gyrotropic waveguides in analytical form. One illustration, bibliography of four titles. Résumé.

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Information Theory & Pattern Recognition

UDC 389.0:62-501.2

USSR

AVERBUKH, G. YU., KATASHKOV, E. S., and ROZOV, YU. L.

"Determination of Minimum Interrogation Rate in Analog-Digital Conversion of Random Signals"

Moscow, Izmeritel'naya Tekhnika, No 3, Mar 73, pp 15-17

Abstract: The article considers the problem of selecting the quantization interval in the generation of random processes on the basis of statistical characteristics determined from a limited sample length. Results are obtained relating the quantization step to the length of a processed sample with a given reproduction fidelity. The results show that in problems of random signal generation from digital data, the accuracy of the statistical quick analysis can be comparatively low, and the samples selected to be processed in a number of practical cases should have a length of no more than 10-20 correlation intervals.

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USSR

UDC 631.291.27

VERBUKH, G. YU., ROZOV, YU. L., CHELPANOV, I. B., Leningrad

"Error in Measuring the Maximum Values of a Stationary Random Process by Discrete Methods"

Novosibirsk, Avtometriya, No 2, 1973, pp 35-42

Abstract: A study was made of the problem of estimating the error in determining the maximum values of a continuous random process by digital data. The analytical expressions were obtained for determining the amplitude and phase errors by means of which the maximum possible recording interval can be found with respect to the given admissible error in recording the extremal values. Only one simplest algorithm is considered: The values of the process which are greater than two adjacent ones are taken as the estimate of the magnitude and position of the local extremum. The amplitude error in determining the maximum values of the investigated signals is also considered. The results of the analysis indicates the possibility of using digital recording techniques to determine the maximum values of the investigated processes. The formulas which are derived permit determination of the admissible digitalization interval by the given admissible error in reproducing the maximum values.

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USSR

UDC 620.179.16

AVERBUKH, I. I., and GRADINAR, V. V., All-Union Scientific Research Institute of Nondestructive Testing

"Testing the Strength Properties of Composite Materials "

Sverdlovsk, Defektoskopiya, No 3, 1973, pp 12-15

Abstract: The method of acoustical emission was employed to study glued joints and their strength in bimetallic materials. Layer materials were jointed with type VS-10T cement. The materials were titanium and steel joined by explosive forming using the cement. Certain parameters (incomplete polymerization of the cement, increase of seam width, creation of a porous seam, and weak adhesion bonding) were varied for testing. To determine shear strength, the acoustical emission pulses were measured for varying applied load. From this, shear strength was determined and it was found that the number of pulses increases with increasing load up to a load of 2500 kg, after which it drops off. From this study it was determined that the method of acoustical emission can be used as a means of determining the proper heat treatment for bimetallic materials to obtain the maximum shear strength. Three figures, two table, and three bibliographic references.

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USSR

Svirskiy, L. D., Khzmkhot'ko, A. F., Moscow, Zashchita Metallov, Vol 9, No 3, Jul-Aug 73, pp 482-484.

upon transition from Li to K, while the effective charge and bond strength with oxygen decrease.

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USSR

UDC 620.179.16

NIKIFORENKO, Zh. G., GLUKHOV, N. A., AVERBUKH, I. I.

"Measurement of Elastic Wave Velocity and Acoustical Anisotropy in Plates"

Defektoskopiya, No 4, 1971, pp 74-82.

Abstract: It is demonstrated theoretically that electromagnetic excitation causes longitudinal and transverse ultrasonic oscillations. A resonant method of measurement is described and a block diagram is presented of a device for measurement of elastic wave velocities and acoustical anisotropy in plates. Electromagnetic excitation of ultrasonic waves is achieved in the 1-20 MHz band. Oscillograms of resonant pulses produced in a thin, orthotropic steel plate are presented.

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USSR

UDC 620.179

AVERBUKH, I. I., VAYNBERG, V. YE., CHEGORINSKAYA, O. N.,  
GRADINAR, V. V., All-Union Scientific Research Institute of  
Nondestructive Control, Kishinev

"The Use of Ultrasonic Emission in Nondestructive Control"

Sverdlovsk, Defektoskopiya, No 1, 1972, pp 26-32

Abstract: An experimental investigation was made of the possibility of using ultrasonic emission for the detection of defective parts of welded constructions and determining the bonding strength of bimetallic sheets and strips. The frequency spectrum and the character of the increase in the emission intensity make it possible to evaluate the characteristics of the material. In supersonic emission investigations, difficulties arise which are connected with the reception and separation of signals of supersonic emission on the noise background. Tuning out from acoustic low-frequency noises is done by appropriate selection of transducers and electronic equipment. 9 illustrations, 7 bibliographic references

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USSR

UDC 621.9.658.5

BUDENKOV, B. A., POLUKHIN, V. P., and AVERBUKH, I. I.

"Using Ultrasound to Automatically Control Strip Thickness"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya,"  
1970, pp 271-274

Translation: A description is given of the diagrams and operating principle of an electromagnetic acoustic transformer and contactless resonance thickness measurer which makes it possible to control the thickness of strip with a precision up to 1.5 percent at a rolling speed of 20 meters per second and ensures locality of measurement within several centimeters. Four figures.

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USSR

UDC 621.318.134.029.64:621.385.632.2

AYERBUKH, M.E., LEPILOV, V.A., NEGANOV, V.A.

"Use Of Ferrite Rectifier In Decimeter Band M-Type TWT With Spiral Delay System"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue No 10, pp 140-143 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A182)

Translation: The paper presents the experimental dependences of the properties of a spiral delay line of rectangular cross section with a ferrite plate, on the temperature, the composition of the ferrite, and the magnitudes of the magnetizing fields. 3 ref. Summary.

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USSR

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UDC: 621.372.823:621.315.61:517.564.3:  
:621.385.63

AVERBUKH, M. E., VASIL'YEV, L. V.

"On the Theory of a Tubular Dielectric Delay Structure of Elliptical Cross Section"

V sb. Vopr. elektron. tekhniki (Problems of Electronic Technology--collection of works), Saratov, 1970, pp 80-84 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 6B118)

Translation: A dispersion equation is derived and critical conditions are studied for hybrid even and odd slow waves of arbitrary order using Mathieu functions. One illustration, bibliography of six titles. Resumé.

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USSR

UDC 621.385.632

A  
VERBUKH, M.E., VASIL'YEVA, L.V.

"To A Theory Of Circulator Load Cut Of The Energy Of A TWT To Connected Spirals"

V sb. Vopr. elektron. tekhniki (Problems Of Electronic Technology--Collection Of Works), Saratov, 1970, pp 127-131 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6A159)

Translation: The paper derives the dispersion equations of axially symmetric slow waves in connected coaxial spirals adjacent from the outside and inside to longitudinally magnetized ferrite media, in the absence of losses. Evaluating computing for the dispersion are conducted. Summary.

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USSR

UDC 621.357.7.035.4:669.245'779

AVEREUKH, M. YE., BAKHIDOV, R. S., and CHUMAKOVA, O. K.

"Electrolytic Precipitation of Nickel-Phosphorus Alloys in the Presence of Phosphoric Acid"

Alma-Ata, Khimiya i Khim. technol. (Chemistry and Chemical Technology) No 2, 1971, pp 147-154 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L390)

Translation: The effect of the initial pH of the electrolyte (0.85-1.8) and its concentration of phosphate ions (0-1.53 mole/l.) on the electrodeposition of Ni-P alloys was examined. It was shown that with an increase in the pH, the  $V_{T_k}$  [expansion unknown] of Ni and P increased, and  $H_2$  decreased; the part of P in the cathode alloy for this was decreased and the microhardness of the alloy increased. The effect of the phosphoric acid is to buffer the electrolyte; the buffering capacity of the solution is increased with the addition of  $H_3PO_4$ . Based on data of the overall  $V_{T_k}$  of the cathode products, it was shown that at an initial pH 1.5, cathode Ni-P alloys were formed as a result of electrochemical processes. At a higher initial pH, there was a possibility of simultaneously reducing the Ni chemically.

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USSR

UDC 621.357.7.035.2:669.245'  
779

AVERBUKH, M. YE., VAKHIDOV, R. S., and SHVYDKAYA, L. I.

"Change in the Acidity of the Outer Cathode Layer in the Process of Electrodeposition of a Nickel-Phosphorus Alloy"

Alma-Ata, Khimiya i Khim. tekhnol. (Chemistry and Chemical Technology) No 2, 1971, pp 155-159 (from Referativnyi Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L391)

Translation: Using an antimony microelectrode, the change in the acidity of the outer cathode layer during the process of the electrodeposition of a Ni-P alloy from the following electrolyte was examined (concentrations in moles/l):  $\text{NiSO}_4$ , 0.64;  $\text{NaH}_2\text{PO}_2$ , 0.24;  $\text{H}_3\text{BO}_3$ , 0.32;  $\text{NaCl}$ , 0.34; and different amounts of  $\text{H}_3\text{PO}_4$  or  $\text{H}_2\text{SO}_4$  at a pH of 1.0 to 3.2. Conditions of the electrolysis were:  $D_k$ , 0.05-0.5  $\text{a/cm}^2$  and temperature, 30-90°C. It was established that in all of the conditions studied the outer cathode layer of the electrolyte became more alkaline.

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- 5 -

USSR

UDC 621.385.632 (088.8)

VERBUKH, M.E., MILYUTIN, D.D., POZDNYAKOV, L.V.

"Traveling-Wave Tube"

USSR Author's Certificate No 269325, filed 28 July 67, published 28 July 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A192P)

Translation: The proposed TWT with a spiral delay system and a magnetic periodic focusing system (MPFS) consists of successively mounted annular magnets between which are located annular pole pieces. With the object of assuring stable non-reciprocal absorption of energy of the microwave band and the possibility of changing the frequency range of the absorption, within the cylindrical volume of the TWT limited by the MPFS, alternating ferrite and nonmagnetic insulating units (e.g., in the form of rings or bars) are positioned, while ferrite units are located in the regions between the pole pieces of the MPFS where a longitudinal magnetic field has an identical direction. The proposed improvement of a TWT lies in the fact that, with the object of obtaining an increased nonreciprocal absorption of energy of the microwave band in a narrow frequency band, the ferrite units are located periodically with a period equal to or exceeding by a whole number of times the period of

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USSR

AVERBUKH, M. E., et al, USSR Author's Certificate No 269325,  
filed 28 July 1967, published 28 July 1970

the MPFS in the regions of the longitudinal magnetic field of identical magnitude. In another variation of a TWT, with the object of expanding the band of the frequencies being absorbed, the ferrite units are displaced with reference to the central regions between the pole pieces, different for each unit but not exceeding four periods of the MPFS spacing.

2/2

- 79 -

ICF FIRM NO.		ICF CARD NO.		TREASURE ISLAND		SHEETS	SERIAL NO.
						1	81535
PLACE			POLITICAL SUBDIVISION		COUNTRY		A.F. CHART NO.
					USSR		
PROPER NAME			NAME OTHER THAN PROPER			MINISTRY & NO.	
SUBJECT OR DESCRIPTIVE NAME						CATEGORY	
Magnetometer for measuring thickness of electroplating coating						30	
TITLE OF SOURCE						DATE OF INFO.	
P: Vooruzheniye (Armament), No. 1						DATE PUBLISHED Jan 41	
AUTHOR M. Averbukh and R. Kordonskaya						WHERE PUBLISHED Moscow	
FILED AT	LIBRARY OF CONGRESS	x	LANGUAGE			RUS.	x
REF. NO.	uncl.	MAPS	PHOTOS	one	DIAGRAMS	one	
PAGES EXT.	24-26	EXTRACTOR	PVD	DATE OF EXT.	13 Feb 51	CHECKED	
1							
2	Engineers M.Averbukh and R.Kordonskaya state that the thickness of						
3	electroplating coating at their plant is measured by magnetometers.						
4	Two types of magnetometers are built by this plant: 1) with an electro-						
5	magnet and 2) steel spring-actuated permanent magnets measuring heads.						
6	Two schematic sketches (Fig.1) and (Fig.4) respectively, show the						
7	arrangements.						
8	A wiring diagram is shown on Fig. 2.						
9	Photo (Fig.5, page 26) shows: the instrument.						
10							
11	Size: 2" x 2 3/4".						

*AVERBUKH, M.* Process ALL NAMES

ICF FIRM NO.	ICF CARD NO.	TREASURE ISLAND	SHEETS 1	SERIAL NO. 81534
PLACE	POLITICAL SUBDIVISION	COUNTRY USSR	A.F. CHART NO.	
PROPER NAME	NAME OTHER THAN PROPER		MINISTRY & NO.	
SUBJECT OR DESCRIPTIVE NAME Coercive force meter for control of heat treatment of steel parts			CATEGORY 30	
TITLE OF SOURCE P: Vooruzheniye (Armament), No.1			DATE OF INFO.	
AUTHOR M. Averbukh and R. Kordonskaya			DATE PUBLISHED Jan 41	
FILED AT LIBRARY OF CONGRESS			WHERE PUBLISHED Moscow	
REF. NO. uncl.	MAPS	LANGUAGE RUS	x	
PAGES EXT. 26	EXTRACTOR PVD	PHOTOS one	DIAGRAMS two	
1	DATE OF EXT. 13 Feb 51		CHECKED	
2	Engineers M. Averbukh and R. Kordonskaya describe this meter, which was			
3	built by the physics laboratory of their plant. It is used for the con-			
4	trol of uniformity of heat treatment of steel parts made out of steels			
5	whose hardness is proportionate to the coercive force.			
6	Two electric wiring diagrams illustrate the principle involved.			
7				
8	Photo (fig.3) shows: the instrument with its control box.			
9				
10	Size: 2 1/2" x 3 1/2".			
11				
12	Clarity: poor.			

1/2 016 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--THERMODYNAMICS OF SULFUR DIOXIDE REDUCTION. II. REDUCTION OF SULFUR  
DIOXIDE BY METHANE IN THE PRESENCE OF CARBON AND BY CARBON IN THE  
AUTHOR--AVERBUKH, T.D., RADIVILOV, A.A., BAKINA, N.P. A  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 228-36  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--THERMODYNAMICS, SULFURIC OXIDE, CHEMICAL REDUCTION, METHANE,  
CARBON DISULFIDE, CHEMICAL PRODUCTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1987/0473 STEP NO--UR/0080/70/043/002/0228/0236  
CIRC ACCESSION NO--AP0104080  
UNCLASSIFIED

2/2 016  
CIRC ACCESSION NO--AP0104080

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMODYNAMICS OF SO SUB2 REDN. WITH CH SUB4 IN THE PRESENCE OF C WAS INVESTIGATED AT 1000 TO 1500DEGREESK. AT SO SUB2:CH SUB4 RATIOS OF 1.0 TO 2.5 AND AT PRESSURES OF 0.15 TO 1.0 ATM. THE EQUIL. H SUB2 S YIELD AT 1 ATM, 1000DEGREESK, AND AT A SO SUB2:CH SUB4 RATIO OF 1.0 IS 93PERCENT AND AT 1500DEGREESK 48.5PERCENT. THE EQUIL. CS SUB2 YIELD AT 1 ATM, 1500DEGREESK, AND AT A SO SUB2:CH SUB4 RATIO OF 2.5 IS 62PERCENT. THE SO SUB2 REDN. WITH C IN THE PRESENCE OF H SUB2 D VAPOR WAS INVESTIGATED AT 1000 TO 1500DEGREESK, 0.15 TO 1.0 ATM, AND AT SO SUB2:H SUB2 D RATIOS OF 6 TO 100. THE CS SUB2 EQUIL. YIELD WAS 70 TO 80PERCENT. THE CS SUB2 FORMATION IS REPRESENTED BY THE REACTION 5C PLUS 2SO SUB2 EQUALS CS SUB2 PLUS 4CO. THE PROCESSES ARE NOT SUITABLE FROM A THERMODYNAMICAL POINT OF VIEW (STRONGLY ENDOTHERMIC REACTIONS) FOR INDUSTRIAL CS SUB2 PRODUCTION.

UNCLASSIFIED

Acc. Nr:

AP0049112

Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code:

UR 0080

A

104656w Thermodynamics of the reduction of sulfur dioxide by methane. I. ~~Averbukh, T. D.~~; Radivilov, A. A.; Bakina, N. P. (USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 35-43 (Russ). The heats of reaction and equil. compns. of mixts. contg. CH<sub>4</sub>, SO<sub>2</sub>, S<sub>2</sub>, CS<sub>2</sub>, COS, H<sub>2</sub>S, CO, H<sub>2</sub>, and H<sub>2</sub>O were calcd. for 1000, 1100, 1300, and 1500°K, for molar ratios SO<sub>2</sub>/CH<sub>4</sub> = 1.0, 1.33, 2.0, 2.5 and pressures 0.15, 0.3, 0.6, and 1.0 atm. Max. yield of elementary S results for molar ratio 2.0 and is 58% at 1000°K and 71% at 1500°K. Yield of S increases slightly with pressure. No formation of C black occurred at conditions under investigation.

Ivan Wichterle

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REEL/FRA  
19800918

7 AT



1/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ON HIGHER ORDER DERIVATIVES IN LINEAR TOPOLOGICAL SPACES -U-  
AUTHOR--AVERBUKH, V.I. *A*  
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK MOSKOVSKOGO UNIVERSITETA, MATEMATIKA, MEKhanIKA, 1970, NR  
1, PP 29-32  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATHEMATICAL SCIENCES  
TOPIC TAGS--TOPOLOGY, MATHEMATIC SPACE, DIFFERENTIATION  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAme--1996/0569 STEP NO--UR/0055/70/000/001/0029/0032  
CIRC ACCESSION NO--AP0117799  
UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0117799  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THIS PAPER A SUFFICIENT  
CONDITION FOR THE NTH DERIVATIVE TO BE CONSTANT IS PRESENTED AND EULER'S  
THEOREM ON HOMOGENEOUS FUNCTIONS IS GENERALIZED TO COVER THE CASE OF  
LINEAR TOPOLOGICAL SPACES.

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USSR

UDC 002.6:001.18

AVERBUKH, V. M., BUTRIMOVICH, V. V., and CHEBANOV, O. P.

"Information Activity and Questions in Forecasting"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2: Informatsionnyye Protsessy i Sistemy, No 8, 1971, pp 5-7

Abstract: The activity of information services in forecast compilation consists of two principal stages: viz., (1) the identification and gathering of information materials, and (2) the analytico-synthetic processing of these materials and the compilation of informative surveys of several sources and comparative surveys. The principal information sources used for survey preparation are original, survey, and analytical articles; house organs and advertising publications; descriptions of inventions for patents and author's certificates; special publications (official materials, reports on foreign assignments, and other analogous materials); conference and symposium proceedings; current-awareness and abstract publications.

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USSR

VERBUKH, V. M., et al., Nauchno-Tekhnicheskaya Informatsiya, Seriya 2: Informatsionnyye Protsessy i Sistemy, No 8, 1971, pp 5-7

The following should be done in the information backup work for forecasting: determine the range of questions to be covered by the forecast, compile a list of the literature to be used in preparing the comparative survey; from existing sources establish the average level of results achieved by country, company, enterprise, and by subsequent study of the literature select only those facts which show a deviation from the average level of development of the given area of research; establish prospects for the production of a product or for the direction of scientific research. One of the main ways of determining such prospects is a statistical analysis of the number of publications and the number of scientists engaged in research on the investigated problem.

The survey work includes the following principal stages: analysis of company activity; statistical analysis of publications and the orientation of the creative activity of individual scientists and groups of researchers; analysis of data on achievements in related sectors of science and technology

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USSR

AVERBUKH, V. M., et al., Nauchno-Tekhnicheskaya Informatsiya, Seriya 2: Informatsionnyye Protsessy i Sistemy, No 8, 1971, pp 5-7

and the possibility of their effect on the sector under study; statistical analysis of the opinions of the most competent specialists; analysis of variations in the production volume of products (materials); study and analysis of conference and exhibit materials etc.; study and analysis of market conditions and economic ties between companies; analysis of patent and license agreements; cooperation with scientific establishments and higher educational institutions of the country.

Preliminary work on the compilation of comparative surveys includes organizing and keeping several card files; viz., a company file, author file, product file, and material file. The company file set up by the authors of the article is arranged by country, then alphabetically by company names within the country. Names of Japanese companies are transcribed into English. Each company is given a separate punch card. The information on the card includes company name in the language of the original (except for Japanese),

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USSR

AVERBUKH, V. M., et al., Nauchno-Tekhnicheskaya Informatsiya, Seriya 2: Informatsionnyye Protsessy i Sistemy, No 8, 1971, pp 5-7

address, capital, head of the company, appropriations for research and development work, branches and divisions, principal clients, economic and financial data, publications. The author file uses standard punch cards and includes biographical data (birth, education, employment record) and a list of works with coauthors and publication date. On the basis of all these card files, a comparative survey meeting the requirements of completeness of information and reliability can be compiled.

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USSR

UDC 621.357.7

AVERCHENKO, P. A., PLESKACH, V. M. and TRESKUNOV, B. A., Zaporozh'ye  
Institute of Machine Construction

"Mechanical Properties of Metallic Coatings on Aluminum Alloys"

Moscow, Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 99-102

Abstract: The study concerns determinations of microhardness, elastic modulus and residual stresses of chromium (galvanic) and nickel (chemical) coatings on VD-17 alloys as a function of application technology and heat treatment. The microhardness was determined under 50-g loads. The decrease in the hardness of chromium coatings on heating up to 170°C is not due to recrystallization (which occurs at 900°C) but rather to a complex of phenomena related to hydrogen liberation, stress relaxation, etc. The determination of the elastic modulus was based on changes in the value of loads required to cause relative deformation of the specimens before and after application of coatings. The elastic modulus is practically independent of heat treatment and depends only on coating application conditions. Use was made of the flexible cathode method to determine residual

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USSR

AVERCHENKO, P. A., et al, Zashchita metallov, Vol 8, No 1, Jan-Feb 72,  
pp 99-102

stresses. The results are shown in curves reflecting deformation and distribution of residual stresses over the thickness of chromium and nickel coatings on VD17 and AMg6 alloys following application as well as after heat treatment. (1 illustration, 1 table, 9 bibliographic references).

2/2



AP9047612

CHEMICAL ABST.

11-69

UR 0012

- 83726f Increased stability of cast iron punches for pressing headlight diffusers by oxidation of the working surface. Zubov, A. M.; Averchenko, P. A.; Gusachenko, K. A.; Larin, V. L.; Yudin, N. M. (Zaporozh. Mashinustroit. Inst. im. Chubarva, Zaporozhe, USSR). *Sleklo Keram.* 1969; 26(8), 18-20 (Russ).

A method of preventing scale forming with consequent cleaning and downtime on cast iron glass molding equipment is suggested. It consists of preoxidn. of the components to fix the film on the surface of the molds. Gray cast iron SCH-21-40 plungers were used for tests. The metallurgy of the oxidn. processes in these surface conditions is discussed; the soly. of C in ferrite and pearlite of the cast iron is greater than in Fe oxides, so during oxidn. of cast iron the excess C settles under the Fe oxides. No flaking of the film occurs. The oxide film on the iron, in contrast to films on steel grades 10 and 4Kh12 grow into the base metal. Acid etching shows that the top film is an effective protective layer. The microhardness of the films is about the same for cast iron, and steels 10 and 4Kh13. In addn. to being very hard and dense the oxide films on the plungers preserve the surface finish (for 2-3 hrs. at 500° in steam-air atm.). Production tests on the treated plungers indicate that the life can be boosted 1.5-3 times at 500° for process times of 45 min. K. Shaw

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1/3 . 030 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--BEAM INSTABILITY OF A CURRENT, AND PLASMA HEATING BY AN ELECTRON  
BEAM PRODUCED IN A LINEAR DISCHARGE -U-  
AUTHOR-(03)-KARCHEVSKIY, A.I., AVERIN, V.G., BEZMELNITSYN, V.N.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,  
NR 4, PP 1131-1145

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRIC FIELD, PLASMA INSTABILITY, CURRENT DENSITY, ELECTRON  
BEAM, PLASMA HEATING, HIGH FREQUENCY DISCHARGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1714

STEP NO--UR/0056/70/058/004/1131/1145

CIRC ACCESSION NO--AP0106250

UNCLASSIFIED

2/3 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106250

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS DEMONSTRATED EXPERIMENTALLY THAT IN A LINEAR STRONG CURRENT DISCHARGE (CURRENT I APPROXIMATELY EQUAL TO 15 KA, FREQUENCY 640 KHZ) WITH A PLASMA DENSITY BETWEEN 1 TIMES 10 PRIME13 AND 7 TIMES 10 PRIME13 CM PRIME NEGATIVE3 IN STRONG ELECTRIC FIELDS E SMALLER THAN OR SIMILAR TO 500 V-CM A BEAM CURRENT INSTABILITY DEVELOPS, THE CURRENT IS CARRIED BY A SMALL FRACTION (SIMILAR TO 10 PRIME NEGATIVE3) OF THE PLASMA ELECTRONS AND THE MAIN PART OF THE DISCHARGE CURRENT IS CARRIED BY THE BEAM OF ACCELERATED ELECTRONS. THE ELECTRON BEAM MAY BE PASSED THROUGH THE ANODE OF THE SYSTEM AND IS OF INTEREST FROM THE VIEWPOINT OF CARRYING OUT, FOR EXAMPLE, PHYSICAL INVESTIGATIONS OF PLASMA HEATING IN THE PLASMA BEAM SYSTEM. THE PARAMETERS OF THE ELECTRON BEAM PASSING THROUGH THE ANODE ARE THE FOLLOWING: TOTAL BEAM CURRENT 10-15 KA, BEAM ELECTRON DENSITY N PRIME APPROXIMATELY EQUAL TO 10 PRIME11 CM PRIME NEGATIVE3, ENERGY OF ELECTRONS IN THE BEAM E PRIME VARIES BETWEEN 3 AND 20 KEV, DURATION OF BEAM SIMILAR TO 0.6 MU SEC, ELECTRON BEAM POWER SIMILAR TO 100 MW, BEAM ELECTRON CURRENT DENSITY SIMILAR TO 70 A-CM PRIME2. INTERACTION BETWEEN THE ELECTRON BEAM AND A COLD PLASMA WITH A DENSITY BETWEEN A TIMES 10 PRIME13 AND 7 TIMES 10 PRIME13 CM PRIME NEGATIVE3 LEADS TO STRONG BEAM HEATING OF THE PLASMA TO A PRESSURE NT APPRIMIMATELY EQUAL TO 10 PRIME16 EV-CM PRIME3 AND A HOT PLASMA CONFINING TIME IN A MIRROR TRAP DEVICE OF THE ORDER OF 20 MU SEC.

UNCLASSIFIED

3/3 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106250

ABSTRACT/EXTRACT--IT IS SHOWN THAT THE ANOMALOUS OHMIC RESISTANCE OF THE LINEAR DISCHARGE (WHICH IN THESE EXPERIMENTS IS THE ELECTRON GUN) CAN BE OBSERVED DURING THE FIRST HALF PERIOD OF THE CURRENT AND IS DUE TO RESTRICTION OF THE NUMBER OF CARRIERS IN THE TURBULENT ZONE OF THE DISCHARGE, ELECTRON ACCELERATION AND TRANSFER OF ENERGY BY ACCELERATED ELECTRONS TO THE SYSTEM ANODE.

UNCLASSIFIED

USSR

A UDC 658.1-52.019.3:681.32

LIPIN, YU. N. and AVERIN, V. I.

"Problems of Evaluating the Efficiency and Optimization of Reliability of Automatic Production Control Systems"

Tr. N-I. In-Ta Upravl. Mashin I Sistem (Works of Scientific Research Institute for Control Machines and Systems) No 3, pp 75-83, 1969 (from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Tekhnika, No 2, 1970, Abstract No 2A478 by M. A.)

Translation: Analysis of the reliability of a complex of technical devices for the collection, recording, and processing of information in automatic control systems (ACS), and expenditures for planning and production of more reliable technical devices is used to produce a relationship which serves as the basis for statement of the optimal problem of selecting a level of reliability to provide the maximum economic effect from operation of ACS. Determination of the optimal ACS reliability is reduced to an extremal investigation of the relationship produced and selection of the ACS variant which provides for the maximum value of the economic effectiveness factor E with the maximum level of effectiveness of the system while observing fixed limitations  
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- 01 -

USSR

LIPIN, YU. N., et al., Tr. N-I. In-Ta Upravl. Mashin I Sistem, No 3, pp 75-83, 1969

as to the area of definition of E. If with a fixed level of system effectiveness the value of E is less than the norm, the system must be returned to observe the limitation on E, with subsequent selection of the optimal variant. Two illustrations; eleven bibliographies.

2/2

USSR

UDC 669.245'28:669.245'27

FEDORCHENKO, V. I., AVERIN, V. V., and SAMARIN, A. M. (deceased), Moscow

"Effect of Titanium on Nitrogen Solubility and Activity in Ni-Mo and Ni-W Alloys"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 3, May-Jun 71, pp 73-77

Abstract: An investigation was made of the thermodynamics and kinetics of the interaction between nitrogen and Ni-Mo and Ni-W alloys containing titanium in order to determine the effect of titanium on the behavior of nitrogen in alloys. The nitrogen solubility in Ni+20at% Mo and Ni+20at%W alloys with a titanium content from 0 to 2.28 wt% and from 0-1.65wt%, respectively, was determined at 1600° C as a function of pressure. The results show that the formation of titanium nitride in Ni-W alloys takes place at lower pressure values and titanium concentrations than in Ni-Mo alloys. This is governed by increased titanium activity in Ni-W in comparison with the Ni-Mo alloy. The linear dependence of nitrogen solubility on the square root of the pressure attests to the fact that in alloys containing a nitride forming element, nitrogen solubilizes in monatomic form. A formula is derived for determining the nitrogen activity coefficient  $f_N$ , and its dependence on titanium concentration is plotted in  $\lg f_N$ -Ti% coordinates.

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USSR

AVERKIN, A. A., BOROV, Yu. G., IVANOV, G. A., and REGEL', A. R.

"Effect of Pressure on the Electrical Properties of Bismuth"

Leningrad, Fizika Tverdogo Tela, Vol 13, No 2, February 1971, pp 378-380

Abstract: The effect of hydrostatic pressure up to 15 kilobars on the electrical conductivity, Hall effect, reluctance, and thermal emf of single crystals of pure bismuth (99.999%) at room temperature is investigated in this article. The band model of bismuth is used to calculate the variation in concentration and mobility of the current carriers as a function of pressure. Experimental and calculated results are presented graphically. They show that the concentration of the carriers drops by 40-45% at a pressure of 13 kilobars. A small increase in electron mobility and anomalous increase in hole mobility are also detected. It is shown that the band model of bismuth correctly depicts the conduction band, and the occurrence of a new mobile group of holes is possible for the valence band.

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AVERRIKYEV, V.S.

PRODUCTION OF HIGHLY TEXTURIZED PERMANENT MAGNETS  
FROM MAGNETICALLY ANISOTROPIC POWDERS

JPRS 60499  
9 November 1973

Article by Val. S. Averkiyev, L. M. Magat, A. S. Yermolenko, N. A. Reshetnikov, V. S. Nigmatov, A. V. Deryagin, V. S. Boydenko, and Ye. V. Shestakov, Institute of Metal Physics, USSR Academy of Sciences, Sverdlovsk, Russia, Vol. 35, No. 2, 1973, pp. 422-426.

In recent years considerable successes have been achieved in the field of developing materials for permanent magnets using the rapid growth of compounds of the type  $RCo_2$  (where R is one of the rare-earth elements—yttrium or thorium), which possess extremely high values of the constant of uniaxial anisotropy (on the order of  $10^7$ – $10^8$  erg/cm<sup>3</sup>), for example,  $1/2$ ). The process of manufacturing permanent magnets from such materials is reduced to grinding an alloy and compacting the resultant powder. Here, since due to the high value of anisotropy energy, the role of the magnetostatic interaction turns out to be insignificant and the powder can be compacted without substantial lowering of the coercive force, to a density close to the solid material. All the particles must be oriented prior to compaction to accomplish the maximum possible values of magnetic energy (it is suggested that each particle is a single crystal and, consequently, magnetically uniaxial) and the compaction to be done in the axis of easy magnetization along one direction so as to create the magnetic structure. This can usually be achieved by means of placing the powder in a magnetic field. The main difficulty is in preserving the magnetic texture during the subsequent compaction of the powder  $1/2$ .

Methods of pressing in metallic dies ordinarily used leads to a significant lowering of the powder magnetic texture. This was caused by deformation of the material in one direction (in

USSR

UDC 539.3+534.231.1

AVERKO, YE. M.

"The Motion of a Hollow Sphere in a Field of Horizontal Transverse Waves"

Novosibirsk, Inertsion. istochniki i priyemniki seysmich. voln (Inertial Sources and Receivers of Seismic Waves, Collection of Works), 1972, pp 194-208 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4V113 by M. T. Zakhidov)

Translation: The motion of a sphere in a field of stationary horizontal waves, and also in a secondary field, arising from this movement, is considered when a horizontal transverse elastic wave falls on the sphere. The boundary conditions were analogous to those in another work (see Abstract No 4V97) and were modified for spheres. It was shown that in the given formulation an absolutely rigid sphere moves progressively in the direction of a particle in the impinging wave and simultaneously rotates; as a result of the rotation a secondary field arises and, as a consequence, a field of transverse waves. The moment acting on the sphere when the transverse wave falls on it is calculated and the derived equation of motion of the sphere is given. The inertial properties of the hollow sphere are determined. (6 bibliographic entries)

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USSR

UDC 539.3+534.231.1

AVERKO, YE. M.

~~"A Rotating Inertial Source of Transverse Spherical Waves"~~

Novosibirsk, Inertsion. istochnik i priyemniki seysmich. voln (Inertial Sources and Receivers of Seismic Waves, Collection of Works), 1972, pp 100-111 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4V114 by M. T. Zakhidov)

Translation: A calculation of an inertial source in the form of a hollow sphere with an external radius  $r_0$  and an internal radius  $r_1$  is given. The rigid sphere rotates around an axis in an unlimited elastic space. It is demonstrated that in the given case in an elastic medium only a transverse wave arises. The source is calculated thusly: on the basis of known parameters of the body and the medium, the displacement of a point of the equatorial surface of the sphere cover is found and the displacement of the point of the body-source is determined, then the vector field of the point displacement of the elastic medium is obtained, as well as, finally, the stress  $\mathcal{T}_{r\phi}$ , arising at the external boundary of the sphere and the elastic medium. The extent of applicability of the solution is the condition that the stress must not exceed the limit of elasticity of the medium material. (6 bibliographic entries)

1/1

- 100 -

USSR

UDC 539.3+534.231.1

AVERKO, YE. M.

"An Inertial Oscillating Source of Spherical Elastic Waves"

Novosibirsk, Inertsion, istochniki i priyemniki seysmich. voln. (Inertial Sources and Receivers of Seismic Waves, Collection of Works), 1972, pp 112-130 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4V112 by M. T. Zakhidov)

Translation: A spherical source oscillating in an elastic, unlimited medium, is considered. The calculations are conducted according to the scheme presented by the author (see Abstract No 4V133). The solution of the Dirichlet problem determines the displacement of the longitudinal and transverse waves. The source is related to a class of mixed sources. It was shown that upon projection of such sources, when the problem is posed of obtaining maximal ratio of the amplitudes of displacement in a transverse wave in comparison with a longitudinal wave, the diameter of the source must be minimized. The further solution of the problem was conducted analogously to the previous work of the author (see Abstract No 4V114). (5 bibliographic entries)

1/1

- 99 -

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--THE PROBLEM FORMULATION AND THE METHODS OF SEISMIC MODELING OF  
VOLCANO MAGMATIC CHAMBER -U-  
AUTHOR--(02)-AVERKO, YE.M., BALESTA, S.T. *A*  
COUNTRY OF INFO--USSR  
SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 3, PP 81-88  
DATE PUBLISHED-----70  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--VOLCANO, SEISMIC MODEL, MAGMA  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1991/0865 STEP NO--UR/0210/70/000/003/0081/0088  
CIRC ACCESSION NO--AP0110586  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0110586

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THREEDIMENSIONAL MODEL OF THE VOLCANO CHAMBER OF AVACHINSKI TYPE IS CONSIDERED. IT SHOWN, THAT THIS MODEL CAN BE SUBSTITUTED BY EASILY MODELLED TWODIMENSIONAL DIFFRACTION PROBLEM WITHIN THE PLANE OF THE BOUNDARY, BASEMENT AND OVERLYING PYROCLASTIC TERRANE. THE METHOD OF SEISMIC MODELLING USED FOR DECISION OF THIS PROBLEM, IS DESCRIBED. FACILITY: IGIG SO AN SSSR, NOVOSIBIRSK.

UNCLASSIFIED

USSR

AVERKOVICH, N. V., BONDAREVSKIY, Ye. Ya., DANILOV, Yu. G., and MIRONOV, N. N.,  
All Union Scientific Research Institute of Physical Culture, Moscow Institute of  
Electronic Machine-Building, Kursk Polytechnical Institute, and L'vov Polytech-  
nical Institute

"The Level of Physical Fitness of People Living in Various Parts of the Country,  
and Methods of Evaluating It"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 10, Oct 70, pp 34-39

Abstract: Fitness levels were assessed in 30,000 male and female first- and second-year students at various institutions of higher learning in Moscow, Kursk, and L'vov. The evaluation was based on performance in various athletic events (100 m dash, running broad jump, shot put, 1,500 m run, etc.) and compared with norms established for two different national exercise programs: GTO (Ready for Labor and Defense of the USSR), which has been in existence for 10 years, and the recently proposed (1969) GPZR ("Ready for Labor and Protection of the Motherland"). Although the students of the Moscow institutes and university did best in most of the events in the GTO program, the vast majority of all of the students turned in

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USSR

AVERKOVICH, N. V., et al, Teoriya i Praktika Fizicheskoy Kul'tury, No 10, Oct 70, pp 34-39

an overall performance of satisfactory or better, showing that the GTO exercises are too "easy." On the other hand, performance in the GTZR events was significantly below expectations, primarily because the fitness level of most of the students was too low. Geography is considered to be only one of several factors (e. g., the nature of the institute attended, gym requirements, etc.) cited as responsible for the differences in results among the various institutions.

2/2



1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--INFRARED ABSORPTION IN COSIAS SUB2 -U-  
AUTHOR--(04)-AVERKYEVA, G.K., KARYMSHAKOV, R.K., PROCHUKHAN, V.D.,  
SERGINOV, M.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 591-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--IR ABSORPTION, CADMIUM COMPOUND, SILICON COMPOUND, ARSENIDE,  
FORBIDDEN ZONE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1995/0893 STEP NO--UR/0449/70/004/003/0591/0593  
CIRC ACCESSION NO--AP0115403  
UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0116403

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION SPECTRUM OF CDSIAS SUB2 WITH CHALCOPYRITE STRUCTURE, GROWN FROM A SOLN. OF CDAS, WAS OBTAINED AT ROOM TEMP. AND 0.7-15 MU. THE TRANSMISSION COEFF. EXHIBITED A SHARP INCREASE AT SIMILAR TO 0.8 MU, CORRESPONDING TO THE OPTICAL WIDTH OF THE FORBIDDEN ZONE. THEREAFTER, THE TRANSMISSION COEFF. INCREASED LESS RAPIDLY, REACHING A MAX. OF 48PERCENT AT SIMILAR TO 12 MU. AT 12.8 MU ABSORPTION WAS OBSD. WHICH CAN BE RELATED TO LATTICE VIBRATIONS OR COMPLEXES. MEASUREMENTS OF ABSORPTION COEFFS. IN THE PHOTON RANGE 1.45-1.65 EV WERE MADE TO OBTAIN A MORE ACCURATE DETN. OF THE FORBIDDEN ZONE WIDTH; THE OPTICAL WIDTH OF THE FORBIDDEN ZONE IN THE LARGE ABSORPTION REGION CORRESPONDED TO AN ABSORPTION COEFF. OF 6 TIMES 10 PRIME2 CM PRIME NEGATIVE1. DOUBLE REFRACTION WAS NOTED BUT NOT MEASURED QUANT. FACILITY: FIZ, TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 539.371

AVERSHIN, S. G., Academician Kirghiz Academy of Sciences; Mosinets, V. N.;  
and Cherepanov, G. P.

"The Nature of Mountain Shock in Mining"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 3, 1972, pp 569-571

Abstract: Mountain shock is defined as the explosion-like sudden destruction of rock in the neighborhood of mines which occurs without the release of gas. This paper discusses the mechanism through which mountain shock is manifested, the dynamics of the phenomenon, its advance warning, and the use of shock energy for controlling it. The theory of mountain shock is developed on the basis of the assumption that the massif is uniform and isotropic and that the mine shaft is rectangular and in the zone of mountain pressure. A description of the dynamics of the destruction is given within the framework of the general theory of spontaneous destruction. The authors are associated with the Moscow Mining Institute.

1/1

USSR

UDC 536.46:533.6

SHTESEL', E. A., AVERSON, A. E., PRIBYTKOVA, K. V.

"On the Effect of Natural Convection on the Ignition of Liquid Systems"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 24-29 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B932)

Translation: An approximate theoretical analysis is presented of the phenomenon of ignition considering natural convection. A layer of sufficiently great depth that is infinite in the horizontal direction is considered. Emission is carried out by heating from below under two types of boundary conditions: (a) at a constant temperature of the surface in the course of the process, and (b) under a constant thermal flow. The system of equations of motion, energy, and continuity is investigated. As a result of the physical assumptions made, it is possible to solve the problem by the method of consecutive approximations using the method of integral relationships. Analytical functions showing the lag time as a function of the Reynolds number characterizing the convection intensity and the Prandtl number are obtained for two types of boundary conditions. Several features in the combustion process involved in the natural convection developed are discussed. Authors' abstract.

1/1

USSR

UDC: 621.383.98

AVER'YANOV, G. A., SAFRONOV, I. N., SAVICHEV, B. M., YEGOROV, A. S.

"A Photoelectric Channel With Stabilization of the Range of Variation in the Output Signal"

Moscow, Pribory i Tekhnika Eksperimenta, No 2, Mar/Apr 72, pp 103-105

Abstract: The paper describes the circuit and gives the results of a laboratory check of the input section of a photoelectric channel which provides linear conversion and stabilization within the range of linearity of a monopulse light signal amplifier where the light signal varies over a wide power range. A block diagram of the photoreceiver and a schematic diagram of the input section of the photoelectric channel are given as well as the amplitude characteristic of the photoreceiver channel and oscillograms of output signals. Four figures, bibliography of two titles.

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USSR

UDC 621.382.2

CHASHCHIN, S. P., SAF'YAN, T. L., BARYSHEV, N. S., AVER'YANOV,  
I. S., and MARKINA, N. P.

" $Pb_{1-x}Sn_xSe$  Monocrystalline Photodiodes"

Leningrad, Fizika i tekhnika poluprovodnikov, vol. 5, No. 8, 1971,  
p 1633

Abstract: The Pb-Sn-Se combination has promise as an infrared sensor in a broad range of wavelengths. This brief communication shows that annealing the crystals of this combination is unnecessary to obtain the photosensitivity in the p-n junction formed by the crystals since there is always a region of low vacancy concentration when the junction is obtained by deviating from the stoichiometric state. The authors describe the method they have developed for preparing  $Pb_{0.95}Sn_{0.05}Se$  diodes of the p-type with a carrier concentration of  $10^{19}$  per cubic centimeter. A curve of the spectral distribution for the photosensitivity of such diodes at the temperature of liquid nitrogen is given. The curve shows a maximum at a wavelength of about 10 microns.

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USSR

UDC 621.375.82

3

KURBATOV, L. N., BRITOV, A. D., DIROCHKA, A. I., KOZINA, G. S., MOCHALKIN, N. N.,  
AVER'YANOV, I. S., STARIK, P. M.

"Stimulated Radiation of Solid Solutions of Tin and Lead Chalcogenides in the  
10-Micron Band"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 3, Mos-  
cow, Soviet Radio, 1972, pp 97-99 (from RZh-Fizika, No 12, Dec 72, Abstract No  
12D982)

Translation: A study was made of recombination radiation in the presence of  
electron excitation, and induced emission was obtained in  $Pb_{1-x}Sn_xSe$  crystals  
grown by the Bridgman method with  $x = 0.04, 0.05, \text{ and } 0.07$  and in  $Pb_{1-x}Sn_xTe$   
crystals grown from the gas phase with  $x = 0.17 \text{ and } 0.18$ . The radiation wave-  
length at  $90^\circ K$  is within the 8-11-micron band. The pulse power is 1-10 mil-  
liwatts. A study was made of the temperature functions. The maximum operating  
temperature does not exceed  $140^\circ K$ . The bibliography has 5 entries.

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ABSTRACT: The results of an experimental investigation of the delay time of a vacuum-gage system for pressure measurements under isothermal conditions at pressures  $p = 10^{-1} - 10^3 \text{ N/m}^2$  are presented. A schematic diagram of the vacuum system used in the experiment is given. The experimental setup and measuring techniques are described and discussed. The results show that the magnitude of delay time appears to be a function of the geometric dimensions of the system components, while the effect of a pressure drop at both ends of the measuring system (collector-manometric transducer) in the pressure range considered can be neglected. From an analysis of the experimental data presented in the form of the dependence of the delay time on the diameter of the connecting tube for manometric transducers LT-2 and MT-6 an

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BULK DISK PROCESSED

ACC NR: AP9013286

SOURCE CODE: UR/0421/69/000/002/0063/0064

AUTHOR: Aver'yanov, P. N. (Moscow); Voronin, F. S. (Moscow); Omel'chenko, D. M. (Moscow); Kamzayeva, N. A. (Moscow)

ORG: none

TITLE: On the delay time of pressure measuring systems on models in a rarefied gas flow

SOURCE: AN SSSR. Izv. Mekh zhidk i gaza, no. 2, 1969, 63-64

TOPIC TAGS: rarefied gas, pressure measurement, wind tunnel instrumentation, pressure transducer, experiment aerodynamics

ABSTRACT: The results of an experimental investigation of the delay time of a

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002200220012-0

empirical formula may be recommended for determining the delay time of pressure measuring systems on models in a flow of rarefied gas in low-density wind tunnels using the LT-2 and MT-6 manometric transducers in the  $p = 10^{-1}$  to  $10^3$ -N/m<sup>2</sup> pressure range. Orig. art. has: 3 figures. [AB]

SUB CODE: 14/ SUBM DATE: 26Aug68/ ORIG REF: 002/ OTH REF: 001 / ATD PRESS: 7052

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APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002200220012-0"

ACC NR. AP9013286

empirical formula was derived for determining the delay time in the form:

$$t = 0.00108 \cdot V^{0.03} [L^{1.03} d^{-2.18}] \cdot \mu_{\text{max}} \quad (v = 0.02V)$$

where V is the volume in cm<sup>3</sup> of the manometric transducer cylinder, L is the length of the connecting tube in cm, and d is the inside diameter of the same tube. This empirical formula may be recommended for determining the delay time of pressure measuring systems on models in a flow of rarefied gas in low-density wind tunnels

$10^{-1} \text{ to } 10^{-3} \text{ N/m}^2$  pressure

USSR

UDC: 621.315.592

AYER'YANOV, V. L., KARPOVA, L. N., KOLOMIYETS, B. T., LYUBIN, V. M., FEDOROVA, Ye. I., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences of the USSR, Leningrad

"Investigation of Local States in Glassy Semiconductors of the Selenium-Arsenic System"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1709-1715

Abstract: The authors study the change in photoelectric properties and characteristics of heat-stimulated depolarization with variation in the composition of glassy semiconductors in the selenium-arsenic system. When the concentration of arsenic in the specimen is increased there are changes in the sign of the photorectification effect, the spectral characteristics and kinetics of photoconductivity, the slope of the current-illumination characteristics, and the ratio between low-temperature and high-temperature maxima in the curve for heat-stimulated depolarization. The results are discussed from the standpoint of correlation between composition, structure and parameters of local states.

1/1

1/2 039 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--LOCAL STATES IN AMORPHOUS SEMICONDUCTORS STUDIED BY THE  
THERMOSTIMULATED DEPOLARIZATION METHOD -U-  
AUTHOR-(03)-LYUBIN, V.M., AVERYANOV, V.L., KOLOMIYETS, B.T.  
COUNTRY OF INFO--USSR *A*  
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 394-5  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS, MATERIALS  
TOPIC TAGS--DEPOLARIZATION, THERMAL EFFECT, THIN FILM SEMICONDUCTOR,  
AMORPHOUS SEMICONDUCTOR, SELENIDE, ACTIVATION ENERGY, EXCITED STATE  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1987/1997 STEP NO--UR/0449/70/004/002/0394/0395  
CIRC ACCESSION NO--AP0105071  
UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105071

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMOSTIMULATED  
DEPOLARIZATION WAS STUDIED IN FILMS (GLASS LIKE AS SUB2 SE SUB3, GLASS  
LIKE TL SUB2 SE AS SUB2 SE SUB3, AND AMORPHOUS SB SUB2 SE SUB3; 0.5-2 MU  
THICK, EVAPD. IN VACUO), POLARIZED AT SIMILAR TO 90DEGREESK (10  
PRIME4-10 PRIME5V-CM, WITH SIMULTANEOUS STRONG ILLUMINATION), DURING  
HEATING TO SIMILAR TO 300DEGREESK. THE ACTIVATION ENERGIES FOR VARIOUS  
GROUPS OF CENTERS ARE: 0.05, 0.17-0.25, AND 0.4-0.45 EV FOR TL SUB2  
SE AS SUB2 SE SUB3; 0.3 AND 0.45 EV FOR AS SUB2 SE SUB3; AND 0.1,  
0.15-0.18, AND 0.22-0.25 EV FOR SB SUB2 SE SUB3. THE THERMOSTIMULATED  
DEPOLARIZATION METHOD MAKES IT POSSIBLE TO ELUCIDATE REGULARITIES OF THE  
SYSTEM OF LOCAL STATES IN THE FORBIDDEN GAP OF AMORPHOUS AND GLASS LIKE  
SEMICONDUCTORS WITH MORE DETAIL. FACILITY: FIZ. TEKH. INST. IM.  
IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.967.004

AYER'YANOV, V. Ya., BAYRASHEVSKIY, A. M., GEORGIYANOV, K. V., TUPYSEV, A. N.,  
YUKHOV, I. V.

"Marine Radar Stations and Their Use (Handbook). Vol. 3"

Sudovyye radiolokatsionnyye stantsii i ikh primeneniye. (Spravochnoye  
rukovodstvo). T. 3 (cf. English above), Leningrad, "Sudostroyeniye", 1970,  
265 pp, ill. 1 r. 1 k. (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No  
1G 73 K)

[No abstract]

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USSR

UDC 621.315.592

AYER'YANOVA, T. V., BAKUMENKO, V. L., ZARGAR'YANTS, M. N., KURBATOV, I. N.,  
MEZIN, YU. S.

"Photoluminescence of the GaAs:Zn, Ge-GaAs:Ge p-n-Junction"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 376-380

Abstract: Results are presented from spectral microphotoluminescent investigations of p-n-junctions obtained by diffusion of zinc in n-type GaAs alloyed with germanium. Inasmuch as the results of investigating the long wave component of the photoluminescence of these p-n-junctions was discussed earlier [T. V. Aver'yanova, et al., FTP, No 5, 331, 1971], only the shortwave part of the emission (8,100-8,500 Å) is investigated in the present paper. All the studies were performed at a temperature of 77° K. The photoluminescence was observed from the shearing side with respect to the cleavage planes perpendicular to the p-n-junction plane. A He-Ne laser with  $\lambda = 6,328 \text{ Å}$  was used as the excitation source. Curves are presented showing the spectral composition of the photoluminescence of n-type GaAs alloyed with Ge for  $n = (2.7-4) \cdot 10^{16} \text{ cm}^{-3}$  and  $T = 77^\circ \text{ K}$ , the photoluminescence and photoresponse characteristics for the structure obtained by diffusion of Zn in n-type GaAs:Ge and the photoluminescence characteristic of the structure obtained by diffusion of zinc in 1/2



USSR

AYER'YAKOVA, T. V., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 376-380

n-GaAs: Te. The proposed model for explaining the results of the spectral microphotoluminescent measurements appears plausible but requires direct proof.

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1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--GELATION OF POLY,VINYL CHLORIDE -U-  
AUTHOR--(02)-RYSKINA, I.I., AVERYANOVA, V.M.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 59-61  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--GELATION, POLYVINYL CHLORIDE, ELASTICITY, MELTING POINT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3005/0178 STEP NO--UR/0153/70/013/001/0059/0061  
CIRC ACCESSION NO--AT0132455  
UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70  
CIRC ACCESSION NO--AT0132455  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GELATION OF POLY(VINYL  
CHLORIDE) (I) (OF VISCOSITY AV. MOL. WT. 35,000) WAS STUDIED IN CLCH  
SUB2 CH SUB2 CL AT ROOM TEMP. A METHOD WAS DEVELOPED FOR DETG. THE M.P.  
OF I GELS BY EXTRAPOLATING THE MAX. ELASTICITY VS. ABS. TEMP. THE  
CALCD. M.P., THE GELATION TEMP., AND TEMP. DEPENDENT HYSTERESIS  
SUGGESTED THAT THE ORIENTED REGIONS OF I WERE CROSSLINKED. THE  
ACTIVATION ENERGY OF VISCOUS FLOW WAS DETD. FACILITY: SARATOV.  
GOS. UNIV. IM. CHERNYSHEVSKOGO, SARATOV, USSR.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--DETERMINATION OF THE EXTENT OF THE EFFECT OF AN EXTERNAL MAGNETIC  
FIELD ON WATER -U-  
AUTHOR--(03)--SHAKHOV, A.I., REZNIK, M.V., AVETISOV, A.S.  
COUNTRY OF INFO--USSR  
SOURCE--PROM. ENERG. 1969, 24(11) 34-5  
DATE PUBLISHED-----69  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--MAGNETIC FIELD EFFECT, EXTERNAL MAGNETIC FIELD, WATER ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1979/1679 STEP NO--UR/0094/69/024/011/0034/0035  
CIRC ACCESSION NO--AP0047997  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0047997

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. IT IS POSSIBLE TO EST. A CHANGE IN WATER OR AQ. SOLN. STRUCTURE AFTER TREATMENT IN A MAGNETIC FIELD (H) FROM THE INTEGRAL VOL. CHANGE (DELTA V) OF A WATER ALC. MIXT. BEFORE AND AFTER MIXING. THE INFLUENCE OF THE MAGNETIC TREATMENT OF WATER ON THE EFFICIENCY OF WATER SOFTENING BY LIME TREATMENT WAS STUDIED, AND THE RESULTS ARE CORRELATED WITH THE FORMER. THE MAX. ON THE CURVE DESCRIBING THE EFFECT OF H (0-10 PRIME3 A-CM) ON WATER (INITIAL CONDITIONS: TEMP. 20.5DEGREES, PH 7.45, TOTAL HARDNESS 6.4 MEQUIVS-L., FREE CO SUB2 CONC. 16 MG-L., AND CARBONATE HARDNESS 5.2 MEQUIVS-L.), I.E. THE OPTIMUM IMPROVEMENT OF THE SEDIMENTATION RATE (FOR CACO SUB3 PLUS MG(OH) SUB2 IS LARGER THAN OR EQUAL TO 0.5 MM-SEC, COMPARED FOR WATER WITH AND WITHOUT A MAGNETIC TREATMENT) CORRESPONDS PRECISELY TO THE MIN. ON THE DELTA V(H) CURVE. THUS, THE WATER ALC. TEST CAN BE USED AS A QUICK INDICATOR TO DET. OPERATING CONDITIONS FFOR THE MAGNETIC TREATMENT OF WATER.

UNCLASSIFIED

Pathology

USSR

UDC 617.7-.681.092.4.001.57:519.24

AVETISOV, E. S., BUNIN, A. Ya., LUGOVSKOY, V. M., and KOZLOVA, L. P.,  
Moscow Scientific Research Institute of Eye Diseases imeni Gel'mgol'ts

"Possibility of Mathematical Modeling of the Process of Change in Intraocular Pressure in Primary Glaucoma"

Moscow, Vestnik Oftal'mologii, No 5, 1971, pp 10-16

Abstract: The proposed mathematical model of change in intraocular pressure (IOP) in different phases of primary glaucoma is based on two assumptions: (a) the central factor in the pathogenesis of the disease is the progressive death of functional elements of the optic nerve and retina caused by metabolic change combined with high IOP; (b) the metabolic rate in eye tissues and level of IOP are related in such a way that the former may increase when the latter rises slightly but decrease with further rise in IOP. Hence a rise in IOP may, with respect to the metabolic rate, be either compensatory or aggravating in nature. The dynamics of change in the average level of IOP over a fairly long period is useful for the early detection of glaucoma and objective evaluation of the course of the disease. For example, if tonograms obtained over a period of 1 to 1 1/2 years reflect a progressive rise in the average level of IOP, the presence of glaucoma can be considered confirmed. If the 1/2

USSR

AVETISOV, E. S., et al., Vestnik Oftal'mologii, No 5, 1971, pp 10-16

diagnosis of glaucoma was established previously, the continued rise is an indication that the course of the disease is unfavorable.

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1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--THE ROLE OF TONOMETRY IN EARLY DIAGNOSIS OF GLAUCOMA -U-

AUTHOR-(03)-AVETISOV, E.S., KOZLOVA, L.P., LUGOVSKOY, V.M.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 2, PP 41-44

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EYE DISEASE, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY KEY/FRAME--1986/0834

STEP NO--UR/0357/70/000/002/0041/0044

CIRC ACCESSION NO--AP0102796

UNCLASSIFIED



2/2 022

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102795  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. TONOGRAMS TAKEN IN PERSONS WHO HAD BEEN UNDER OBSERVATION FOR 2-8 YEARS IN CONNECTION WITH SUSPECTED GLAUCOMA WERE USED IN EVALUATING THE ROLE OF TONOMETRIC INVESTIGATIONS FOR AN EARLY DIAGNOSIS OF GLAUCOMA. ONE GROUP INCLUDED 20 SUBJECTS WITH THE DIAGNOSIS OF GLAUCOMA VERIFIED IN THE COURSE OF OBSERVATION, THE OTHER ONE EMBRACING 20 PERSONS IN REGARD TO WHOM THE DIAGNOSIS OF GLAUCOMA DID NOT FIND CONFIRMATION. TO STATISTICAL ANALYSIS WERE SUBJECTED TONOGRAMS OBTAINED IN PRIMARY DIURNAL TONOMETRY COVERING A PERIOD OF 5 DAYS. THE LEVEL OF INTRAOCULAR TENSION AND ITS DAILY AND WEEKLY RANGE WERE STUDIED. A TOTAL OF 400 TONOGRAMS, 200 FOR EACH GROUP, WERE SCRUTINIZED. THESE INVESTIGATIONS DEMONSTRATED THAT IN BORDER LINE CASES DIURNAL TONOMETRY ALONE CANNOT BE REGARDED A SUFFICIENTLY RELIABLE CRITERION FOR AN EARLY DIAGNOSIS OF GLAUCOMA.

UNCLASSIFIED

USSR

UDC 541.69+543.422.8

MNDZHOYAN, A. L. (Deceased), AVOYAN, R. L., AVETISYAN, A. A., and ARUTYUNYAN, E. G., Institute of Fine Organic Chemistry Imeni A. L. Mndzhoyan, Acad. Sc. Armenian SSR (Yerevan)

"Conformation and Physiological Activity of Molecules. II. X-ray Structural Analysis of Diteline"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 25, No 8, 1972, pp 710-717

Abstract: Final results of the x-ray structural analysis of diteline are reported. The compound -- the dimethiodide of dimethylaminoethyl ester of succinic acid -- is used in medicine as a muscle relaxant. Three dimensional x-ray diffraction analysis showed the parameters of the elementary cell to be:  $a = 12.79$ ;  $b = 8.29$ ;  $c = 9.73 \text{ \AA}$ ;  $\beta = 96.8^\circ$ ;  $N = 2$ ; and the coordination number =  $P_{21}$ . The number of independent reflections was 630. The structure was determined by the heavy atom method and correlated by Fourier analysis and by the method of least squares up to  $R = 0.135$ . The molecule has the shape of a horse-shoe. The  $N^+CCO$  fragments are gauche. The  $N^+ \dots N^+$  interatomic distance has been determined to be  $7.75 \text{ \AA}$ .

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UDC 541.69+543.422.8

AVOYAN, R. L., ARAKELOVA, E. R., AVETISYAN, A. A., and ARUTYUNYAN, E. G.,  
Institute of Fine Organic Chemistry Imeni A. L. Mndzhoyan, Acad. Sc. Armenian  
SSR (Yerevan)

"Conformation and Physiological Activity of Molecules. I. Roentgenographic  
Study of the  $\gamma$ -Diethylaminopropyl Ester Hydrobromide of  $\alpha$ -Ethoxydiphenyl-  
acetic Acid"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 25, No 8, 1972, pp 702-709

Abstract: A total X-ray structural analysis has been carried out on the hydro-  
bromide of  $\gamma$ -diethylaminopropyl ester of  $\alpha$ -ethoxydiphenylacetic acid -- an  
analog of the medicinal preparation etpenal with both the nicotino- and mus-  
caryolytic activity. On the basis of three dimensional series of Petterson and  
Fourier analysis and by the method of least squares up to  $R = 0.165$  the  
crystalline structure was determined. The elementary cell is monoclinic with  
following parameters:  $a = 19.87$ ,  $b = 7.71$ ,  $c = 16.78$ ,  $\beta = 114.5^\circ$ ,  $N = 4$  (coordi-  
nation number  $P_{21}$ ). The number of independent non-zero reflections is 640.

The coordination of the N-atom is represented by a "deformed" tetrahedron, three  
sites being occupied by carbon atoms  $C_{19}$ ,  $C_{20}$ , and  $C_{22}$ , the fourth -- by the  
hydrogen atom of the  $N-H \cdots Br$  hydrogen bond. The  $H \cdots Br$  distance is  $3.44 \text{ \AA}$ .  
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USSR

UDC: 538.576.54

AVETISYAN, A. A.

"Concerning Calculation of the Diffraction of Electromagnetic Waves by Homogeneous Bodies of Revolution With Arbitrary Permittivities"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 701-706

Abstract: The author considers axisymmetric scattering of electromagnetic waves by a finite body of revolution with permittivity and permeability  $\epsilon$  and  $\mu$ . It is shown that the generalized method of separation of variables can be effectively extended to the case of transparent bodies of revolution with arbitrary  $\epsilon$  and  $\mu$ . An expression is derived for the amplitudes of the departing waves at given amplitudes of the arriving waves and for given boundary conditions on the surface. The results are extended to the limiting case of bodies with a high complex index of refraction and with finite wave impedance, and also to ideal conductors. The latter expressions coincide with those found in a previous paper. The author thanks L. A. Vaynshteyn for continued interest and assistance in the work.

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1/2 009 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--UNSATURATED LACTONES. I. SYNTHESIS OF SUBSTITUTED UNSATURATED GAMMA  
LACTONES BY CONDENSING TERTIARY ALPHA OXO ALCOHOLS WITH MALONIC ESTER  
AUTHOR--(05)-AVETISYAN, A.A., TATEVUSYAN, G.E., MANGASARYAN, TS.A.,  
MATSOYAN, S.G., CANGYAN, M.T.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 962-4 (RUSS)  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ESTERIFICATION, CHEMICAL SYNTHESIS, LACTONE, ALCOHOL,  
CONDENSATION REACTION, MOLECULAR STRUCTURE, TERTIARY ALCOHOL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3006/1316 STEP NO--UR/0366/70/006/005/0962/0964  
CIRC ACCESSION NO--AP0134990  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0134990

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE REACTION OF RR C(OH)COME WITH  
CH SUB2 (CO SUB2 ET) IN ABS. ETCN CNTG. NA GAVE 5,R, 5,R PRIME  
DISTRIBUTED 4,METHYL,DELTA ALPHA,BETA,BUTENOLIDES (R AND R PRIME ARE ME  
AND ME, ME AND ET OR (CH SUB2) SUB5). THE REACTION INVOLVES  
TRANSESTERIFICATION. THE INTERMEDIATE ESTER MECOCME SUB2 O SUB2 CCH  
SUB2 CO SUB2 ET WAS ISOLATED AND ITS STRUCTURE ESTABLISHED BY SYNTHESIS.  
FACILITY: EREVAN. GOS. UNIV., EREVAN, USSR.

UNCLASSIFIED

Acc. Nr: **AP0045086** Abstracting Service: **5/70** Ref. Code: **URO109**  
 INTERNAT. AEROSPACE ABST.

**A**  
 A70-22401 # Generalized method of the separation of variables and the diffraction of electromagnetic waves on bodies of revolution (Obobshchennyi metod razdeleniia peremennykh i difraktsiia elektromagnitnykh voln na telakh vrashcheniia). **A. A. Avetisian**, *Radiotekhnika i Elektronika*, vol. 15, Jan. 1970, p. 3-13. 19 refs. in Russian.

Description of a numerical method for solving the problem of the diffraction of electromagnetic waves on ideally conducting bodies of revolution. Design formulas are derived for an electric dipole which is positioned along the x axis of a body of revolution with the moment directed both along the z axis and perpendicularly to it. A plane wave propagating along the z axis is also treated. Curves are plotted for the field scattered by extended and compressed ellipsoids having products of wave number and semiaxis from 1 to 5 and from 0.4 to 10 for the two semiaxes, respectively.

T.M.

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 19771999  
 21

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--REACTIONS OF DIETHYL ALKYLGLYCIDYLMALONATES WITH AMINES -U-

AUTHOR--(04)--MESROPYAN, E.G., KARAPETYAN, Z.T., AVETISYAN, D.V., DANGYAN,  
M.T.

COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23,1, 45-8

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYL RADICAL, AMINE, ALIPHATIC ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1999/1940

STEP NO--UR/0426/70/023/001/0045/0048

CIRC ACCESSION NO--AP0123721

UNCLASSIFIED



2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123721

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ESTERS (I) WERE HEATED WITH 1 EQUIV. DIALKYLAMINE AND 0.25 EQUIV. H SUB2 O 4 HR AT 40DEGREES TO GIVE II (R, R PRIME1, PERCENT YIELD, B SUB1, N 20 OVER O, AND M. P. PICRATE GIVEN) SHOWN ON MICROFICHE. FACILITY: EREVAN. GOS. UNIV., EREVAN, USSR.

UNCLASSIFIED

USSR

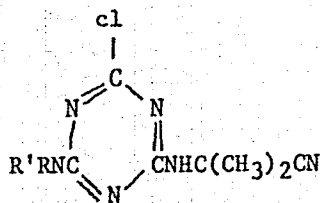
UDC 632.938+547.872/874

DOBLATYAN, V. V., and AVETISYAN, F. V.

"Synthesis of Pesticides: 2-chloro(alkoxy, methylmercapto)-4-alkyl-(dialkyl)-amino-6- $\alpha$ -cyano- $\alpha$ -methyl-ethylamino-symm-triazines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 25, No 10, 1972, pp 880-885

Abstract: The title compounds were prepared for possible use as herbicides by reacting the  $\alpha$ -aminoisobutyronitrile with cyanuric chloride. The product is treated with amine to yield the product. These symm-triazines have the general structure



For the particular derivatives considered:  $R = CH_3$ ,  $R' = H$ ;  $R = C_2H_5$ ,  $R' = H$ ;  $R = iso-C_3H_7$ ,  $R' = H$ ;  $R = CH_3$ ,  $R' = CH_3$ ;  $R = C_2H_5$ ,  $R' = C_2H_5$ ;  
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DOBLATYAN, V. V., and AVETISYAN, F. V., Armyanskiy Khimicheskiy Zhurnal, Vol 55, No 10, 1972, pp 880-885

and  $R = (CN)(CH_3)_2$ ,  $R' = H$ . An evaluation of the herbicidal properties of these compounds will be reported in a separate article.

2/2

- 55 -

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--A NEW SPECIES OF FLEA OF CTENOPHTHALMUS FROM ARMENIA -U-  
AUTHOR--(02)-LABUNETS, N.F., AVETISYAN, G.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZOO L ZH 49(1): 157-159. ILLUS. 1970  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--FLEA, ANATOMY, GEOGRAPHIC LOCATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/0485 STEP NO--UR/0439/70/049/001/0157/0159  
CIRC ACCESSION NO--AP0134253  
UNCLASSIFIED